

AMENDMENTS TO THE CLAIMS

The following is a complete listing of the claims indicating the current status of each claim and including amendments currently entered as highlighted.

1-12. (canceled)

13. (new) A device for the transport of fluids through a biological barrier, the device comprising:

- (a) a substrate having a front surface;
- (b) an array of microneedles projecting from said front surface, each of said microneedles having a maximum width dimension of no more than about 400  $\mu\text{m}$  and a maximum height dimension of no more than about 2 mm, each of said microneedles including:
  - (i) a penetrating tip,
  - (ii) at least one inclined surface extending from said penetrating tip towards said front surface of the substrate, and
  - (iii) a fluid flow channel formed through the microneedle and intersecting with said inclined surface,

wherein, in a cross-section through said microneedle proximal to said front surface of said substrate, said fluid flow channel defines a first area having a first centroid and an outline of said microneedle defines a second area having a second centroid, said first and second centroids being non-coincident.

14. (new) A device for the transport of fluids through a biological barrier, the device comprising:

- (a) a substrate having a front surface;
- (b) an array of microneedles projecting from said front surface, each of said microneedles having a maximum width dimension of no more than about 400  $\mu\text{m}$  and a maximum height dimension of no more than about 2 mm, each of said microneedles including:
  - (i) a penetrating tip,
  - (ii) at least one inclined surface extending from said penetrating tip towards said front surface of the substrate, and
  - (iii) a fluid flow channel formed through the microneedle and intersecting with said inclined surface,

such that, in a cross-section through said microneedle proximal to said front surface of said substrate, said fluid flow channel is circumscribed by a closed wall, a first region of said closed wall having a thickness greater than that of a second region of said closed wall.

15. (new) The device of claim 14, wherein said first region and said second region lie substantially on opposite sides of said fluid flow channel.

16. (new) The device of claim 14, wherein the thickness of said closed wall in said first region is at least twice the thickness of said closed wall in said second region.

17. (new) The device of claim 14, wherein the thickness of said closed wall in said first region is at least equal to a maximum dimension of said fluid flow channel as viewed in said cross-section.